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formed of rectangular squared stones equal in workmanship to those that compose the tomb of Atreus at Mycenæ. A similar arrangement was observed in the walls of Melos, by Mons. Jassaud.

On the western coast of Asia, Minor Dr. Chandler has mentioned under the improper name of *incertum* the Cyclopean structures that confine the bed of the Cayster near Ephesus. Mons. le Chevalier had observed the two structures united in the walls of the citadel of Prusa in Bithynia; and in his journey in the Troad, he gave an engraving of a tumulus coated with a wall of Cyclopean structure. Similar remains had been discovered by Mons. Gropius on one of the summits of mount Sipylus, near Smyrna, in the ruins of two cities, and of several tumuli, some being of polygonal, others of squared blocks. The distance of time at which these two cities were founded, seems confirmed by the different structure of the tumuli corresponding to that of the walls. One of these tumuli is 320 feet in circumference, and of a proportional conical height. Mons. Tricon, pursuing the researches of Mons. Gropius on other heights of Sipylus, has discovered the ruins of two other cities, the external walls of which are of Cyclopean structure, while

those of the buildings within are of squared stones. The latter he supposes to be the less ancient; and tumuli of both structures, found in the vicinity, countenance the opinion of their having been formed at two periods. Both however appear to be of high antiquity, as not a single fragment of a column or inscription has been seen among them. He intends to continue his investigation throughout Caria and Ionia.

On the northern coasts of this country, we learn from Mons. Fourcade, that the moles of the ports of Sinope and Amisus are of Cyclopean structure, as are also the most ancient tumuli. One of these tumuli has been opened, and in it were found pieces of gold, that had been cast, and on which characters were perceptible. In his way to France, Mons. F. was obliged to land in the Crimea, and there he found half the peninsula of Kertsch surrounded with gigantic tumuli. They are sixty-six in number, formed of earth coated with blocks of stone. In these we find every gradation of structure that occurs in the walls of the ancient cities of Greece, from the most irregular polygons, almost down to the square. These were probably the tombs of the ancient kings of the Tauric Chersonese.

DISCOVERIES AND IMPROVEMENTS IN ARTS, MANUFACTURES, &c.

Machine for separating Iron Filings from their mixture with other metals; by Mr. J. D. Ross, of Princes-street, Soho.

THE object of the machine I have invented is to separate iron filings, turnings, &c. from those of brass or finer metals, in place of the

slow and tedious process hitherto employed, which is by a common magnet held in the hand. By my invention many magnets may now be employed at once, combined and attached to a machine on a large scale. The magnetic hammers are so contrived as to take up the iron

filings from the mixture of them with other filings, or metallic particles, placed in the trays or end-boxes, and drop them into the receiving box in the centre, which is effected by the alternate motion of a winch-handle, working the two magnetic hammers placed at the two angles of a quadrant or anchor. In proportion to the power of the magnets and to the force of the blow given by the hammers, a great quantity of iron is separated from the brass, by the alternate motion, and dropped into the receiver placed in the centre of the machine.

I have shewed the model to persons engaged in various metallic works, who gave me great encouragement by their signatures and sanction.

A new invented Reel for Mill-spun yarn.

A Reel, intended for the use of mill-spinners, has been invented by a manufacturer in Montrose, so constructed that it will not move after a thread breaks, which will entirely prevent the false tell, so much complained of in mill-spun yarn. A model, upon a small scale, is at present in the possession of the inventor, and is acknowledged by all who have seen it, to be both simple and perfect; and, however careless servants may be, it will be impossible for them, without an intended fraud, to make bad work; and more can be done with the new reel, than by the present mode of reeling.

Some remarks on materials used in bleaching, resulting from the late discoveries in chemistry, by Dr. Davy.

The acid known by the name of oxymuriatic acid, and so important in the process of bleaching, has been stated by Lavoisier, and the French chemists to be a compound of muriatic and oxygen; but Dr. Davy asserts

that it is a simple substance *sui generis*, not containing oxygen, but possessing of itself an acidifying principle when combined with an inflammable basis. Muriatic acid is, according to Dr. Davy, a compound of this principle with hydrogen. Some of the experiments exhibited in support of this opinion, are the following:—Perfectly dry oxymuriatic acid gas and hydrogen gas were burned together without any water being produced, which must have been the case had this gas contained oxygen. The result of this combination, is muriatic acid only. Phosphorus, and other inflammable substances burned in this gas, yield results very different from combinations with oxygen. When the alkalis are heated in this gas, they form what are called muriats. The oxygen of the alkalis is given out. According to Dr. Davy, muriat of soda or common salt, is a more simple substance than what is called pure soda; for the muriat of soda is the metal of soda united with what is improperly called oxymuriatic gas, but soda contains the metal united with oxygen and water. If this opinion were true, the class of muriats would be excluded from chemical compounds, but we confess we cannot see any reason why muriatic acid, what ever be its constituent parts, should not be as capable of uniting with the alkalis to form a salt, as nitric and other acids. Many eminent chemists are still unwilling to admit Dr. Davy's conclusions respecting oxymuriatic acid, or what he now calls chlorine, from its yellow colour: and the question respecting its constituent parts may still be considered as *sub-judice*. Dr. Davy has discovered a new gas, which is formed by the union of oxymuriatic or chlorine gas with oxygen, their af-